ACC NR: AT6016408 (A) SOURCE CODE: UR/0000/65/000/000/0041/0050

AUTHORS: Savitskiy, Ye. M.; Terekhova, V. F.; Burov, I. V.; Naumkin, O. P.

ORG: none

TITLE: Investigation of monocrystals and alloys of rare earth metals

SOURCE: AN SSSR. Institut metallurgii. Metallovedeniye legkikh splavov (Metallography of light alloys). Moscow, Izd-vo Nauka, 1965, 41-50

TOPIC TAGS: alloy, rare earth metal, phase diagram, metal crystal

ABSTRACT: A method for the growth of monocrystals and Sc, Y, Gd, and Nd was developed, and some properties, e.g., microhardness, thermal emf, and magnetic susceptibility, of the crystals were determined. The monocrystals were obtained by high-temperature vacuum annealing of distilled metal specimens possessing a high degree of crystal orientation. The experimental results are presented graphically (see Fig. 1). In addition, the phase diagrams were determined for the binary systems: Sc--Er, Gd--Tb, Ce--Sc, Ce--Cd, Sc--Al, Y--Sn, and Fe--Nd (see Fig. 2).

Card 1/3

L 39883-66

ACC NR: AT6016408

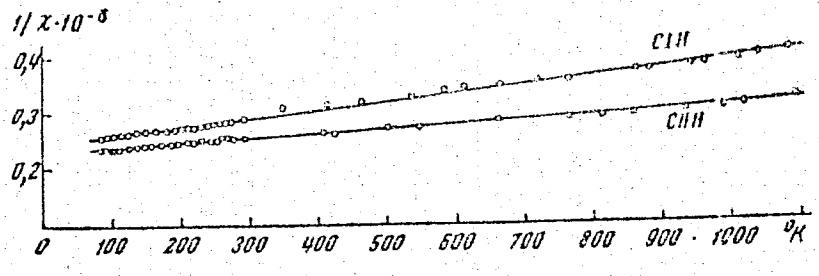


Fig. 1. Anisotropy of the specific magnetic susceptibility in monocrystals of Sc.

Card 2/3

ACC NR: AT6016403

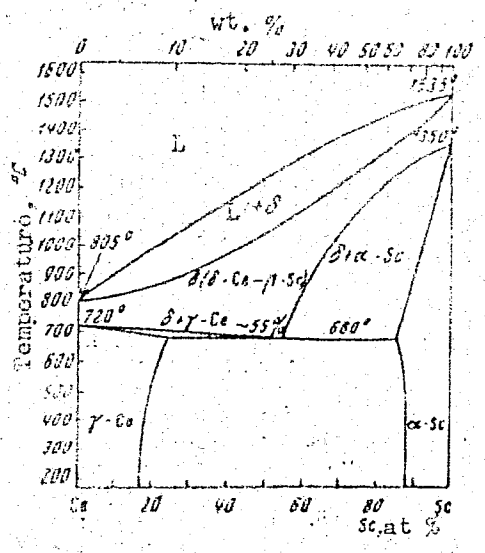


Fig. 2. Phase diagram of the system Ce—Sc.

Orig. art. has: 13 figures.

SUB CODE: 11,20/ SUBM DATE: 16Sep65/ ORIG REF: 007/ OTH REF: 004

Card 3/3

L 38550-66 EWT(m)/T/EWP(w)/EWP(t)/ETI IJP(c) JD/JG/GD

ACC NR: AT6014749 SOURCE CODE: UR/0000/65/000/000/0053/0058

AUTHORS: Baron, V. V. (Candidate of technical sciences); Savitskiy, Ye. M. (Doctor of chemical sciences); Bychkova, M. I.

ORG: none

TITLE: The superconducting properties of niobium-titanium alloys and the effect of alloy additions on the critical current density

SOURCE: Soveshchaniye po metallovedeniyu i metallofizike sverkhprovodnikov. 1st, 1964. Metallovedeniye i metallofizika sverkhprovodnikov (Metallography and physics of metals in superconductors); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 53-58

TOPIC TAGS: superconductivity, superconducting alloy, niobium base alloy, titanium containing alloy, tensile strength, critical magnetic field, [illegible] current density

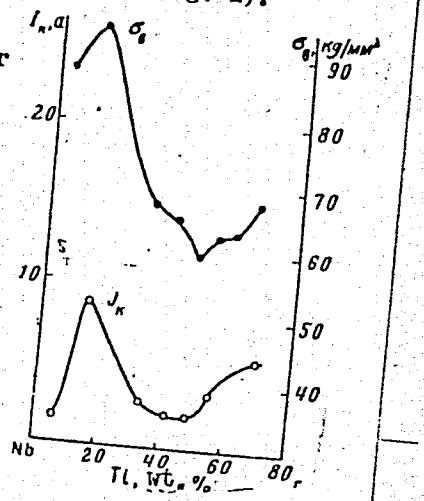
ABSTRACT: The critical current density of niobium alloys with titanium of varying composition (5.5, 14.8, 32.6, 48.8, 55.61, and 68% Ti) is studied as a function of the applied magnetic field strength. The effect of small admixtures (0.2—0.5%) on the critical current density and the mechanical properties of the alloys is also studied. Certain elements of subgroups IIIB, IV, and VIA of the periodic system were used as the alloying admixtures. The ingots were smelted in an electric-arc furnace in a helium atmosphere. The starting materials were niobium with a purity

Card 1/3

ACC NR: AT6014749

of 99.8% and titanium iodide. The obtained ingots were cut into squares of 1.3 x 1.3 mm and were drawn to a diameter of 0.25 mm. The tensile strength and electric resistance were measured. The superconductivity transition temperature and critical current density were measured in fields of from 0 to 21.2 koe (see Fig. 1).

Fig. 1. Critical current and tensile strength of alloys of Nb—Ti system as functions of composition for maximum field of 21.5 koe.



The maximum superconductivity transition temperature (10.5K) was found in the

alloys with 32.6% Ti (see Fig. 2).

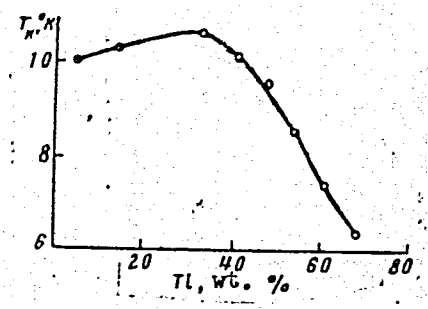


Fig. 2. Superconductivity transition temperature of alloys of Nb--Ti system as function of titanium concentration.

It was determined that the effect of alloy components in concentrations to 0.5% on the transition temperature was negligible. Orig. art. has: 8 graphs and 1 diagram.

SUB CODE: 11, 20/ SUBM DATE: 23Dec65/ ORIG REF: 004/ OTH REF: 007

Card 3/3

L 38549-66 EWT(m)/T/EWP(t)/EWP(w)/ETI IJP(c) JG/JD/GD

ACC NR: AT6014750 SOURCE CODE: UR/0000/65/000/000/0059/0064

AUTHORS: Yefimov, Yu. V.; Baron, V. V. (Candidate of technical sciences); Savitskiy, Ye. M. (Doctor of chemical sciences)

ORG: none

TITLE: The superconducting properties of alloys of vanadium with titanium

SOURCE: Soveshchaniye po metallovedeniyu i metallofizike sverkhprovodnikov. 1st, 1964. Metallovedeniye i metallofizika sverkhprovodnikov (Metallography and physics of metals in superconductors); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 59-64

TOPIC TAGS: superconductivity, superconducting alloy, vanadium base alloy, titanium containing alloy, ~~critical~~ current density, cold drawing, electric wire, critical magnetic field, solid solution, metal heat treatment

ABSTRACT: The critical current density of vanadium-titanium alloys with a body-centered cubic lattice is studied as a function of the applied magnetic field strength and the titanium concentration. The starting materials were titanium iodide (99.9 wt %) and carbothermal vanadium which, after cerium refining, contained (wt %): 99.766 V, 0.11 C, 0.04 O, 0.001 N, and 0.10 Ce. The alloys were smelted in an arc furnace in an atmosphere of purified helium at a pressure of 0.7 atm. After annealing at 800C for 1 hr, one batch of specimens was cold rolled and drawn into wire with a diameter of 0.2 mm. After cold deformation, the second batch was annealed again at 900C for 1 hr.

Card 1/3

ACC NR: AT6014750

The third batch was given intermediate vacuum annealing. In the cold-worked state, the alloy with ~ 50 wt % Ti had the maximum critical current density ($1.4 \cdot 10^4$ a/cm^2) for 99% deformation and a field strength of 22.2 koe (see Fig. 1).

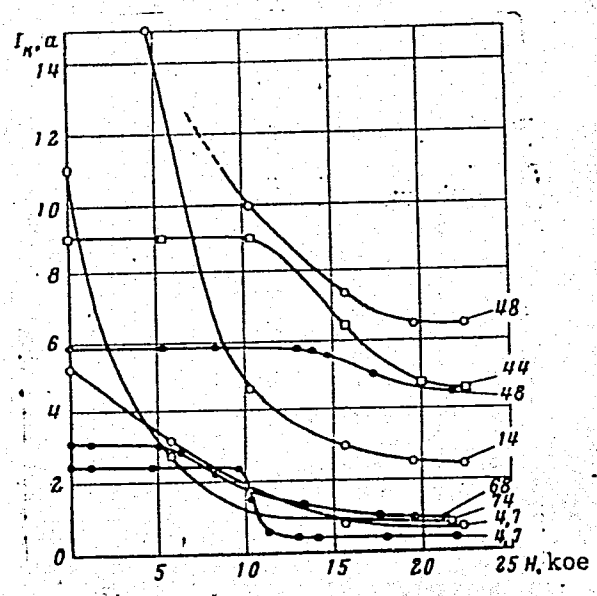


Fig. 1. Critical current of vanadium-titanium wire (0.2 mm in diameter) as a function of applied magnetic field strength. The numbers indicate % Ti.

L 38549-66

ACC NR: AT6014750

A combination of heat treatment and cold deformation was found to be most effective for the vanadium-rich alloys. The authors thank the coworkers of the Department of Inorganic Chemistry, Leningrad State University im. I. Franko (Neorganicheskoy khimii LGU), for performing the x-ray analysis of the alloys, and R. Sh. Akchurin and V. V. Volodin for measuring the critical current. Orig. art. has: 5 graphs and 1 photograph.

SUB CODE: 11, 20/ SUBM DATE: 23Dec65/ ORIG REF: 003/ OTH REF: 021

Card 3/3

L 38535-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG/GD

ACC NR: AT6014755 SOURCE CODE: UR/0000/65/000/000/0086/0088

AUTHORS: Baron, V. V. (Candidate of technical sciences); Myzenkova, L. F.; Savitskiy, Ye. M. (Doctor of chemical sciences)

39
B+1

ORG: none

TITLE: The phase diagram of the niobium-gallium system

SOURCE: Soveshchaniye po metallovedeniyu i metallofizike sverkhprovodnikov. 1st, 1964. Metallovedeniye i metallofizika sverkhprovodnikov (Metallography and physics of metals in superconductors); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 86-88

TOPIC TAGS: alloy phase diagram, niobium base alloy, gallium alloy, hardness, solid solution, x ray analysis, thermal analysis

ABSTRACT: A phase diagram is constructed for the niobium-gallium system. The work was done because there are no data on the diagram in the literature. The methods of nicrostructural, thermal, and x-ray analysis, and also the microhardness method were used. Alloys with up to 40 wt % gallium were prepared in an arc furnace in a helium atmosphere. The starting materials were gallium with a purity of 99.99% and sintered niobium (99.7%). After annealing, individual alloys were hardened from 800C (30 hrs) and 1200C (30 hrs). It was found that, besides the known compound Nb_3Ga, three additional compounds are formed in the system: Nb_5Ga_3 (31.08 wt % Ga), $\sim Nb_2Ga_3$ (~51 wt % Ga), and $NbGa_3$ (69.20 wt % Ga) (see Fig. 1). The microhardness of the compounds

Card 1/2

SUB CODE: 20Dec65/ ORIG REF: 002/ OTH REF: 003

L 38538-66 EWT(m)/T/EWP(w)/EWP(t)/ETI IJP(c) JG/JD/GD

ACC NR: AT6014757 SOURCE CODE: UR/0000/65/000/000/0091/0100

AUTHORS: Yefimov, Yu. V.; Gladyshevskiy, Ye. I.; Baron, V. V. (Candidate of technical sciences); Savitskiy, Ye. M. (Doctor of chemical sciences)

ORG: none

TITLE: The effect of alloying on the critical temperature of transition to the superconducting state and the crystal-lattice constant of the compound V_3Si

SOURCE: Soveshchaniye po metallovedeniyu i metallofizike sverkhprovodnikov. 1st, 1964. Metallovedeniye i metallofizika sverkhprovodnikov (Metallography and physics of metals in superconductors); trudy soveshchaniye. Moscow, Izd-vo Nauka, 1965, 91-100

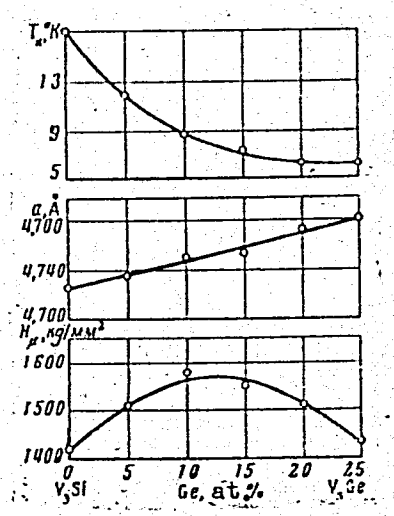
TOPIC TAGS: superconductivity, solid solution, vanadium compound, silicon compound, germanium compound, tin compound, crystal lattice parameter, x ray analysis, solubility

ABSTRACT: The solubility of 17 different elements in the compound V_3Si and the effect of the dissolution of these elements on the critical superconductivity transition temperature are studied. Microstructural and x-ray analysis and the microhardness method are used. The starting materials were sintered vanadium and silicon with a purity of 99.8 wt %. The alloys were prepared in an arc furnace in an atmosphere of purified helium at a pressure of 0.7 atm. The alloys were annealed at 800C

Card 1/3

for 2500 hrs. The x-ray phase analysis was performed by the powder method with chromium radiation in a cylindrical chamber. The transition temperature was measured by the magnetic method. It was found that interstitial solid solutions are formed when elements with small atomic radii are dissolved in V_3Si. There is isomorphous replacement of the vanadium atoms in the crystal lattice of V_3Si by atoms

Fig. 1. Change in critical temperature, lattice constant, and microhardness of solid solutions $V_3(Si, Ge)$.



ACC NR: AT6014757 4

of the transition metals. Atoms of the elements of subgroup B of the periodic system replace Si atoms in the lattice of V_3Si. The pure compound V_3Si has the maximum critical superconductivity transition temperature (see Fig. 1). The authors thank N. Ye. Alekseyevskiy, Institute of Physical Problems AN SSSR (In-t fizproblem AN SSSR) and V. R. Karasik, Physics Institute AN SSSR (Fizicheskiy in-t AN SSSR) for measuring the transition temperatures. Orig. art. has: 4 graphs, 4 tables, 1 diagram, and 2 photographs.

SUB CODE: 11, 20/ SUBM DATE: 23Dec65/ ORIG REF: 008/ OTH REF: 009

L 45100-66 EWT(m)/T/EWP(t)/ETI IJP(c)

ACC NR: AP6014120 (N) SOURCE CODE: UR/0370/65/000/006/0148/0152

AUTHORS: Grushina, V. V. (Moscow); Rodin, A. M. (Moscow); Burkhanov, G. S. (Moscow); Savitskiy, Ye. M. (Doctor of chemical sciences)(Moscow)

ORG: none

TITLE: Sorption of hydrogen by Ti-Ni, Ti-Cr, and Ti-Al alloys

SOURCE: AN SSSR. Izvestiya. Metally, no, 6, 1965, 148-152

TOPIC TAGS: titanium containing alloy, chromium containing alloy, aluminum containing alloy, hydrogen

ABSTRACT: The sorption of hydrogen by the titanium alloys: Ti--Ni (from 5 to 70 wt % Ni), Ti--Cr (from 4.3 to 78.5 wt % Cr), and Ti--Al (from 5--30 wt % Al) was studied. The investigation supplements the results of V. V. Grushina, and A. M. Rodin (Zh. fiz. khimii, 37, 1963, No. 3, 559). A schematic of the experimental apparatus is shown. The experimental results are presented graphically (see Fig. 1). It was found that the absorption of hydrogen by the alloys was strongly dependent on the nature of the solid solutions formed in the alloy. The liberation of hydrogen from hydrogenated titanium alloys at 200--1050C is more rapid than that from hydrogenated titanium.

Card 1/2 UDC: 669.295

L 43100-66

ACC NR: AP6014120

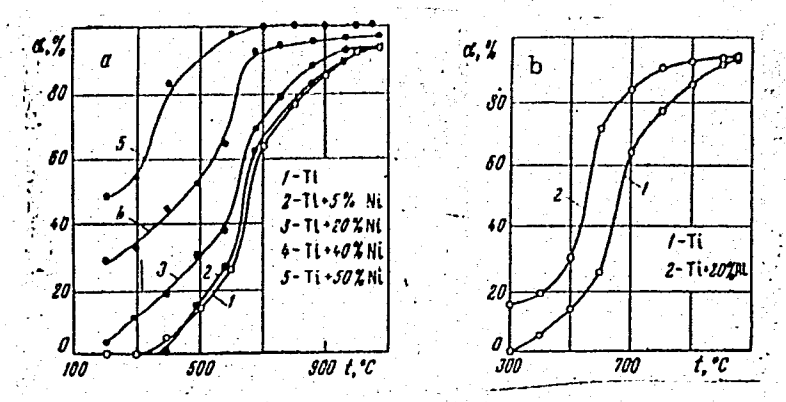


Fig. 1. Liberation of hydrogen from hydrogenated alloys Ti-Ni (a), nTi-Al (b), at different temperatures; α - ratio of the amount of liberated to absorbed hydrogen by the metal at a given temperature.

Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 14Sep65/ ORIG REF: 008/ OTH REF: 009

Card 2/2 MLP

ACC NR: AP6013371 SOURCE CODE: UR/0370/66/000/002/0163/0165

AUTHOR: Myzenkova, L. F. (Moscow); Baron, V. V. (Moscow); Savitskiy, Ye. M. (Moscow)

ORG: none

TITLE: Phase diagram of the niobium-antimony system

SOURCE: AN SSSR. Izvestiya. Metally, no. 2, 1966, 163-165

TOPIC TAGS: alloy phase diagram, niobium alloy, antimony ~~alloy~~

ABSTRACT: Microstructural, thermal, and x-ray methods as well as microhardness measurements were used to plot the phase diagram of the Nb-Sb system (see Fig. 1). Four compounds were identified in this system: Nb_3Sb (75.00 at.% Nb), NbSb (50 at.% Nb), and apparently also Nb_3Sb_2 (60 at.% Nb) and Nb_4Sb_5 (44.4 at.% Nb). All the compounds are formed by peritectic reactions taking place at 1750, 1140, 1020, and 760°C respectively. The microhardness of alloys based on the compound Nb_3Sb amounts to 668-490 kg/mm^2, which indicates the presence of a region of solid solution based on this compound; the microhardness of NbSb is 235, and that of Nb_4Sb_5, 357 kg/mm^2. X-ray structural analysis confirmed that the compound Nb_3Sb has a cubic primitive lattice with constant a=5.26 Å. NbSb has a hexagonal lattice (a=4.270 Å, c=5.447 Å, a/c=1.276) belonging to the NiAs type. Niobium lowers the melting point of antimony, forming with it a eutectic (610°C) whose composition is displaced toward antimony

Card 1/3 UDC: 669.017.12

L 38[illegible]

ACC NR: AP6013371

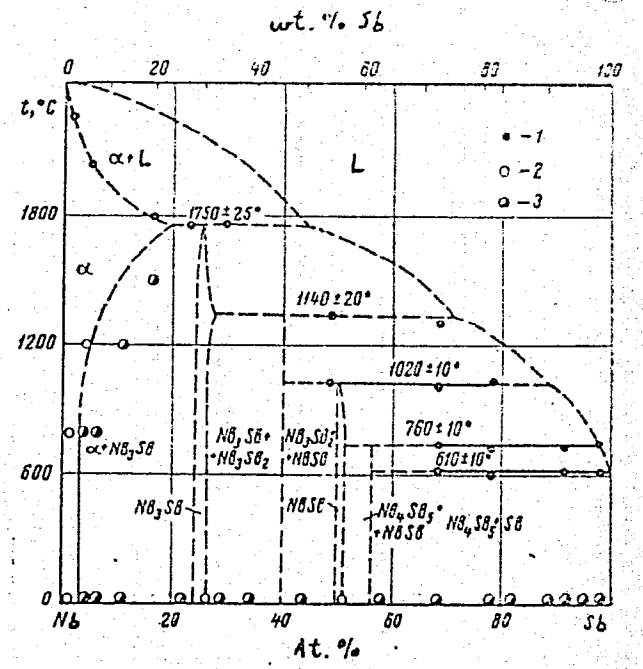


Fig. 1. Phase diagram of the Nb-Sb system: 1 - data of thermal analysis; 2 - single-phase alloys; 3 - two-phase alloys.

Card 2/3

L 38969-66
ACC NR: AP6013371

(pseudoeutectic). The phase diagram of the Nb-Sb systems is in many respects analogous to that of elements of group Va (V, Nb) with elements of group IIIb (Ga). Orig. art. has: 2 figures.

SUB CODE: 11/ SUBM DATE: 16May64/ ORIG REF: 003/ OTH REF: 002

Card 3/3

L 33368-66 EWP(k)/EWT(d)/EWT(m)/T/EWP(t)/ETI/EWP(k)/EWP(b) IJP(c) SOURCE CODE: UR/0370/66/000/003/0149/0149

ACC NR: AP6019773 (N)

WW/JD/HW/JG

AUTHOR: Savitskiy, Ye. M. (Moscow); Baron, V. V. (Moscow); Yefimov, Yu. V. (Moscow)

ORG: none

TITLE: Effect of vanadium on the structure and superconducting properties of niobium-vanadium alloys

SOURCE: AN SSSR. Izvestiya. Metally, no. 3, 1966, 156-160, and insert facing pg. 149

TOPIC TAGS: superconducting alloy, niobium alloy, zirconium containing alloy, vanadium containing alloy, alloy structure, alloy superconducting property

ABSTRACT: The effect of vanadium (up to 15%) on the structure, critical current and the temperature of transition to the superconducting state of binary Nb-Zr alloys has been investigated. The alloys were melted from 99.75—99.95%-pure components in a nonconsumable electrode arc furnace in a helium atmosphere at a pressure of 0.7 atm, homogenized at 1100C for 200 hr, upset at 900—1000C with reductions of up to 20%, annealed at 900C for 100 hr, and furnace cooled. In the as-cast condition the majority of the alloys had a single-phase structure of β-solid solution with a bcc lattice. After annealing, only binary Nb-V alloys and ternary Nb-base alloys had a single-phase structure. The majority of annealed alloys contained two phases: the β-Nb-base solid solutions with a bcc lattice and the α-Zr-base solid solutions with a hexagonal lattice. The investigated Zr-rich region of the Nb-Zr-V system

UDC: 669.293.5'296

Card 1/2

ACC NR: AP6019773

contained a three-phase region where a ZrV_2 compound was present in equilibrium with the two solid solutions. Alloying with V slightly decreased the lattice parameters in binary Nb-Zr alloys. The strength of cold-strained alloys with 5%V and of binary Nb-Zr alloys increased from 134 to 185 kg/mm^2 with increasing Zr content from 0 to 50% and then decreased with a further increase in Zr content. Alloys containing more than 70% Zr and 5% V did not sustain cold deformation without process annealing. The temperature of the transition to the superconducting state was measured with a special unit designed by N. D. Kozlova (IMET im. A. A. Baykov). Alloying with V lowered the superconducting characteristics of the binary Nb-Zr alloys. The decrease in the critical current was particularly sharp with small additions of vanadium, while the temperature of the transition to the superconducting state decreased gradually with increasing Zr content. Annealing (at 900C) increased somewhat the critical current of ternary alloys, but the achieved maximum critical current (18—19 amp) was lower than that of cold-strained binary alloys. It appears that binary Nb-Zr alloys have the most favorable conditions for the presence of superconducting properties, and any departure from the optimal conditions, caused by addition of vanadium, lowers the superconducting properties of binary alloys. The authors thank V. V. Volodin and L. S. Apukhtina (IMET im. A. A. Baykov) for the measurements of the superconducting characteristics of the alloys. Orig. art. has: 5 figures. [MS]

SUB CODE: 11/ SUBM DATE: 17Jun65/ ORIG REF: 004/ OTH REF: 006/ ATD PRESS: 5026

Card 2/2 JS

L 43136-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6027747 SOURCE CODE: UR/0370/66/000/004/

AUTHOR: Savitskiy, Ye. M. (Moscow); Tylkina, M. A. (Moscow); Khamidov, O. Kh.

ORG: none

TITLE: Scandium-rhenium system

SOURCE: AN SSSR. Izvestiya. Metally, no. 4, 1966, 116-122

TOPIC TAGS: scandium ~~compound~~ containing rhenium alloy, alloy phase diagram, alloy ~~phase~~ composition, ~~alloy structure, alloy~~ metal property

ABSTRACT: A phase diagram of the scandium-rhenium system (Fig. 1) has been plotted on the basis of data obtained by physicochemical analysis of 13 alloys containing 0 to 100% rhenium, melted from sintered 99.98%-pure rhenium and distilled 99.4—99.6%-pure scandium. The diagram is of the peritectic type with two intermetallic compounds, $ScRe_2$ and Sc_5Re_{24}, and limited solubility of components. The solubility of Sc in Re is approximately 2% Sc at peritectic temperature and decreases insignificantly at lower temperatures. The Sc_5Re_{24} compound has a cubic lattice with a constant a = 9.6448 Å and a microhardness of 1225 kg/mm^2. The $ScRe_2$ compound of the Laves type has a hexagonal, close-packed lattice

UDC: 669.793'849

Card 1/2

ACC NR: AP6027747

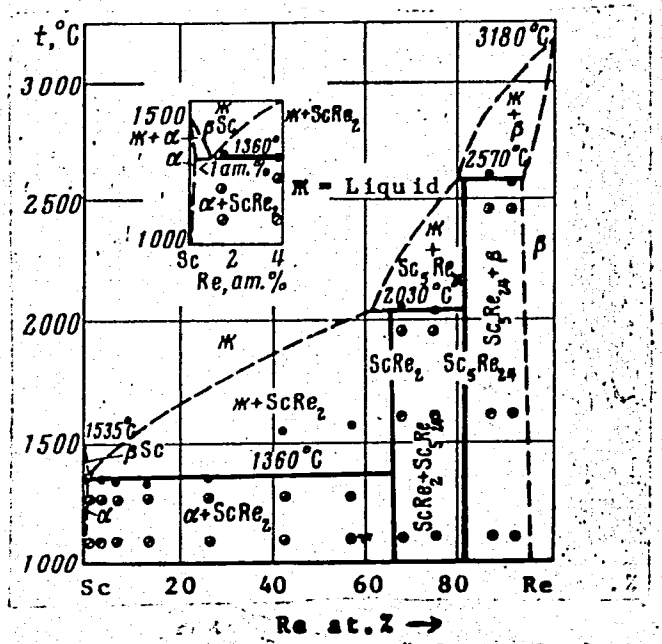


Fig. 1. Phase diagram of the Sc-Re system.

with constant a = 5.270 Å, and a microhardness of 930 kg/mm^2. Scandium-base solid solution and $ScRe_2$ compound form a eutectic at 1360C which contains approximately 1% Re. Orig. art. has: 2 figures and 2 tables. [WW]

SUB CODE: 11/ SUBM DATE: 06Oct64
ORIG REF: 009/ OTH REF: 002

Card 2/2

L 02265-67 EWI(1)/EWI(m)/I/EWP(t)/ETI/EWP(k) IJP(c) JD/JG/GG

ACC NR: AP6025262 SOURCE CODE: UR/0057/66/036/007/1310/1312

AUTHOR: Savitskiy,Ye.M.; Burov,I.V.; Litvak,L.N.; Burkhanov, G.S.

ORG: none

TITLE: Work function anisotropy of molybdenum single crystals

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 7, 1310-1312

TOPIC TAGS: molybdenum, single crystal, work function, thermionic emission

ABSTRACT: The authors have measured the thermionic work functions of three different faces of molybdenum single crystals. The crystals were grown by electron beam zone heating in vacuum. Spectrum analysis showed less than 0.01% metal impurities and vacuum melting revealed the presence of 0.005% oxygen, 0.0002% hydrogen, and 0.019% carbon. 2 x 20 x 1 mm slabs were cut in the desired orientations from the single crystal bars. The slabs were ground and polished to a thickness of 0.2 mm and their orientations were checked by means of x-ray diffraction patterns. Measurements were made on three different groups of faces, which are referred to as (100), (110), and (114) faces, respectively. The inclinations of the nominal (100) and (110) faces to the corresponding crystallographic planes were between 2 and 8°. The inclination of the nominal (114) face to the (114) and (116) planes was between 2 and 4°, and its inclination to the (100) planes was 18°. The work functions were derived from Richardson plots. The system was evacuated to 10^{-7} mm Hg with silicone oil pumps, was

Card 1/2 UDC: 537.581

L 02265-67

ACC NR: AP6025262

baked out at 400° for 20 hours, and was sealed off after the metal parts had been heated to some 1900° K for 10 hours. The vacuum was improved with getters after the system had been sealed off. The cathode was flashed at 2200° K before the measurements. The emission current was measured at seven temperatures from 1600 to 1900° K, the cathode temperature being measured with a thermocouple. The work functions obtained for the nominal (110), (100), and (114) faces were 4.9, 4.35, and 4.18 V, respectively; the probable error in each case was 0.07 V. Orig. art. has: 3 figures.

SUB CODE: 20 SUBM DATE: 28Aug65 ORIG. REF: 006 OTH REF: 001

Card 2/2

L 06577-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6029819 SOURCE CODE: UR/0363/66/002/008/1444/1447

42
40
B

AUTHOR: Savitskiy, Ye. M.; Baron, V. V.; Yefimov, Yu. V.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: The V_3Si-V_3Ga system

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 8, 1966, 1444-1447

TOPIC TAGS: vanadium, gallium, phase diagram, phase composition, phase analysis

ABSTRACT: The V_3Si-V_3Ga system was studied by x ray microstructure and microhardness techniques. The object of the work was to establish the point of transition of the system into a superconductive material and to determine the structures of the alloys of the V_3Si-V_3Ga system. The samples were prepared by fusing mixtures of pure components in an arc furnace in argon atmosphere at 0.9 atm. All samples were homogenized by holding them for 2500 hours at 800°C. The continuous formation of the solid solutions between isomorphic compounds, V_3Si and V_3Ga, at 800°C was established by both x ray and microhardness examinations. The maximum microhardness of 1680 kg/mm^2 was found to correspond to 5-7.5 atom % Ga in the solid solution. At all intercomponent ratios, the solid solutions of V_3Si and V_3Ga were found to have a lattice structure of the Cr_3Si-type. Above 1300°C, the V_3Si-V_3Ga system was found to be composed of two distinct phases: a solid solution based on vanadium and the V_3Si. The transition temperature

Card 1/2 UDC: 546.881'681+546.881'28

L 06577-67

ACC NR: AP6029819

2

of the various compounds of V_3Si-V_3Ga system into the superconducting state can be calculated from the empirical formula

$$T_c = 17.1 + 0.050\,x^{max} + 0.050\,x^{max}$$

where x- is the Ga content in the system in atom %. The authors thank E. I. Gladyshevskiy of L'vov State University for conducting the x ray analysis of the alloys. Orig. art. has: 4 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 18Sep65/ ORIG REF: 006/ OTH REF: 006

Card 2/2

ACC NR: AT6034432 (A) SOURCE CODE: UR/0000/66/000/000/0015/0024

AUTHOR: Savitskiy, Ye. M.; Burkhanov, G. S.; Kopetskiy, Ch. V.; Bokareva, N. N.; Kardashevskaya, V. G.

ORG: none

TITLE: Production and properties of single crystals of refractory metals and alloys

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 15-24

TOPIC TAGS: refractory metal, refractory alloy, single crystal, molybdenum, niobium, tungsten

ABSTRACT: The two main methods for production of metallic single crystals are extraction from a melt by the recrystallization method, and zone refining. The method of extraction from a melt by seeding is widely employed industrially for growing large single crystals of germanium, silicon (up to 80 mm in diameter), and semiconductor compounds of varying composition for diodes, transitors, and condensers. Application of this method to refractory metals has not been widely developed. The article describes in detail the techniques of zone refining. In vertical zone melting without a crucible, the ratio of the surface tension to the density of the melt should be

Card 1/2

ACC NR: AT6034432

10011 cr greater. The maximum size of single crystal rods produced by this method is, for example, 14-16 mm for molybdenum and 6-8 mm for tungsten, with a length of the order of 200-250 up to 500 mm. A table shows the purity and mechanical properties of rhenium of different degrees of purity, including the mechanical properties under elongation stress, the hardness, and the temperature of the start of recrystallization. A further table lists the mechanical properties of single crystals of various alloys of the refractory metals. It is found that an increase in the purity of zone refined molybdenum considerably lowers its resistance to deformation. Based on experimental results, a series of figures illustrate the substructure of single crystalline alloys, the mechanical properties of single crystal alloys of the molybdenum-niobium system, and the microhardness of alloys of the molybdenum-niobium system. P. M. Nosov, N. P. Khazov, A. Ye. Tsutskov, and T. S. Stronina took part in the work. Orig. art. has: 6 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 012/ OTH REF: 005

Card 2/2

ACC NR: AT6034435 (A) SOURCE CODE: UR/0000/66/000/000/0030/0034

AUTHOR: Bychkova, M. I.; Baron, V. V.; Savitskiy, Ye. M.

ORG: none

TITLE: Fusibility diagram of the niobium-tungsten-titanium system and some properties of its alloys

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 30-34

TOPIC TAGS: heat of fusion, niobium containing alloy, tungsten containing alloy, titanium containing alloy

ABSTRACT: The article reports the results of an investigation of 70 alloys of the given system. Of these, 17 were binary alloys. In the ternary region, the alloys were investigated with respect to six radiation cross sections. Chemical analysis of the alloys showed that in certain cases, due to losses of titanium, the composition of the alloys did not correspond to the cross section. As a result of microstructural, x ray, and thermal analysis, and of measurements of the microhardness, it was established that at 1000°, addition of niobium to alloys of tungsten and titanium contracts the two-phase region, which is a mixture of two solid solutions based on

Card 1/2

ACC NR: AT6034435

tungsten and titanium. The two-phase region extends up to 50 weight percent niobium. The article gives a diagram of an isothermal cross section at 1000°C for alloys of the niobium-tungsten-titanium system. Experimental data on the heat resistance of the various alloys is presented in a series of curves. In general, as a result of the investigation, it was established that in the niobium-tungsten-titanium system above 1000° there are formed a wide region of ternary solid solutions β and a two-phase region ($\beta_{Ti} + \beta_{W}$). Many of the alloys have a melting point above 2200°. With a tungsten content of 30-40%, up to 25% titanium can be introduced into the alloys without lowering the melting point below 2200°. Therefore, some of these alloys have sufficiently good heat resistance for industrial application (30% W and 7-10% Ti). Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 005/ OTH REF: 007

Card 2/2

ACC NR: AT6034445 (A) SOURCE CODE: UR/0000/66/000/000/0118/0123

AUTHOR: Savitskiy, Ye. M.; Tsarev, G. L.

ORG: none

TITLE: Fine structure and properties of single crystals of tungsten

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966. 118-123

TOPIC TAGS: single crystal growth, tungsten, electron beam melting

ABSTRACT: Single crystals of tungsten with a diameter of 4 mm and a length of approximately 250 mm were grown by electron beam zone melting, at a rate of displacement of the melting zone of about 5 mm min, and at a working vacuum of 5×10^{-5} mm Hg. The number of passes varied from 1 to 9. The impurity content in the single crystals is shown in a table. Oxygen was determined by the method of vacuum melting, carbon by the combustion method, and the metallic impurities spectroscopically. For purposes of electron microscope examination, thin films were prepared by electrolytic polishing in a 2% NaOH solution. Experimental results are exhibited in tabular form. The following main conclusions were reached: 1) in single crystals of tungsten grown by the electron beam zone melting method there is observed

Card 1/2

ACC NR: AT6034445

a cellular growth structure and individual separations of tungsten carbide, W_2C. The boundaries of the cells are enriched with carbides; 2) under conditions of vacuum melting, tungsten oxides and nitrides are, evidently, completely dissociated and volatilized; 3) zone melting of tungsten in a vacuum does not lead to elimination of carbon. With an increase in the number of passes, the carbon content increases somewhat, while the carbides take on a coarser grain structure; 4) increase in the number of passes leads to purification from metallic impurities; 5) the ductility of the single crystals of tungsten is directly connected with the amount and the dimensions of the tungsten carbides. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 003/ OTH REF: 002

Card 2/2

ACC NR: AT6034483 (N) SOURCE CODE: UR/0000/66/000/000/0297/0303

AUTHOR: Savitskiy, Ye. M.; Burkhanov, G. S.; Bokareva, N. N.

ORG: Moscow Institute of Metallurgy im. A. A. Baykov (Moskovskiy institut metallurgii)

TITLE: Investigation of the structure and properties of molybdenum-columbium alloys in the single crystal state

SOURCE: Rost i nesovershenstva metallicheskikh kristallov (Growth and defects of metal crystals). Kiev, Naukova dumka, 1966, 297-303

TOPIC TAGS: metal zone refining, single crystal growth, refractory alloy, ductility, molybdenum alloy, columbium alloy

ABSTRACT: The purpose of the investigation was to obtain single crystals of alloys of refractory metals free from interstitial impurities which reduce the ductility of the metal. The system molybdenum-columbium was chosen in various Mo-Cb ratios, from pure molybdenum to pure columbium. The starting material for the preparation of the alloys were vacuum melted rods of molybdenum and columbium which were melted together in the apparatus for the zone melting by electron beam. The single crystals of the alloys were obtained by two passes of the molten zone made in both directions, the last pass being made away from the original Mo-Cb rods. It was found that only by using single

Card 1/2

ACC NR: AT6034483

crystals of Mo and Co was it possible to obtain single crystals of alloys with a high concentration of the second component. The change in hardness and electroresistance was a function of the composition, similar to that in polycrystalline alloys, the hardness being greatest at the 50-50 composition. X ray diffraction analysis disclosed a mosaic structure of the single crystal alloys. N. P. Khazov, A. Ye. Tsutskov, and T. S. Stronina took part in the work. Orig. art. has: 6 figures and 1 table.

SUB CODE: 11, 13/ SUBM DATE: 22Jun66/ ORIG REF: 004

Card 2/2

ACC NR: AP6031725 SOURCE CODE: UR/0370/66/000/005/0159/0168

AUTHOR: Zakharov, A. M. (Moscow); Savitskiy, Ye. M. (Moscow)

ORG: none

TITLE: Investigation of phase diagram of ternary tungsten-zirconium-titanium system

SOURCE: AN SSSR. Izvestiya. Metally, no. 5, 1966, 159-168

TOPIC TAGS: ZIRCONIUM CONTAINING ALLOY, TITANIUM CONTAINING ALLOY, ternary alloy, tungsten zirconium titanium alloy, alloy structure, alloy microhardness, tungsten zirconium titanium system, ALLOY PHASE DIAGRAM, TERNARY ALLOY, TUNGSTEN CONTAINING ALLOY

ABSTRACT: Sixty-three tungsten-zirconium-titanium alloys containing 0.0—50.90% tungsten, 0.0—49.40% zirconium and 0.0—51.92% titanium have been investigated. From the data obtained the projection of the ternary phase diagram on the composition triangle (see Fig. 1) was plotted, in addition to several polythermal and isothermal sections. It was found that most alloys annealed at 1500C or 1000C have a single-phase or two-phase structure and only a few have a three-phase structure. Single-phase alloys consisted of α- and β-solid solution of titanium and zirconium in tungsten or vice versa. The microhardness of W_2Zr compound in annealed alloys was 770 kg/mm^2, that of α, ternary tungsten-base solid solution was 390 kg/mm^2, and that of β-solid

 UDC: 669.27'296'295

ACC NR: AP6031725

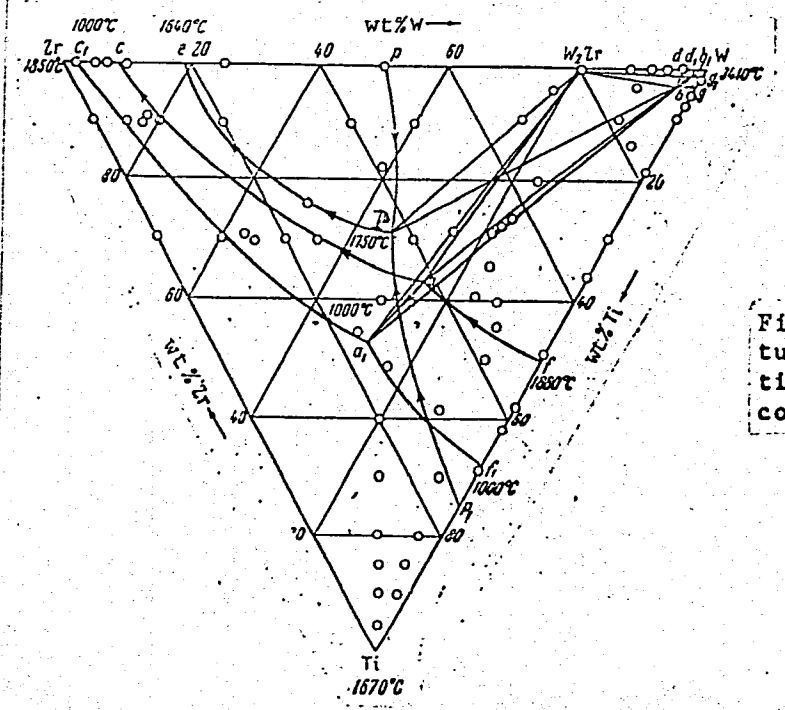


Fig. 1. Projection of tungsten-zirconium-titanium phase diagram on composition triangle

Card 2/3

ACC NR: AP6031725

solution based on high-temperature modifications of titanium and zirconium varied from 125 to 200 kg/mm^2, depending upon composition. The solubility of tungsten and zirconium in β-titanium was found to be high, but decreased from 43—44% at 1500C to 35—36% at 1000C. The increase of titanium content promoted the tungsten solubility in β-zirconium at 1500C and also at 1000C. Orig. art. has: 6 figures.

SUB CODE: 11/ SUBM DATE: 01Mar66/ ORIG REF: 003/ OTH REF: 006

Card 3/3

ACC NR: AP6036444 SOURCE CODE: UR/0370/66/000/006/0121/0126

AUTHOR: Zakharov, A. M. (Moscow); Savitskiy, Ye. M. (Moscow)

ORG: none

TITLE: Investigation of the phase diagram of the ternary W-Mo-Ti system

SOURCE: AN SSSR. Izvestiya. Metally, no. 6, 1966, 121-126

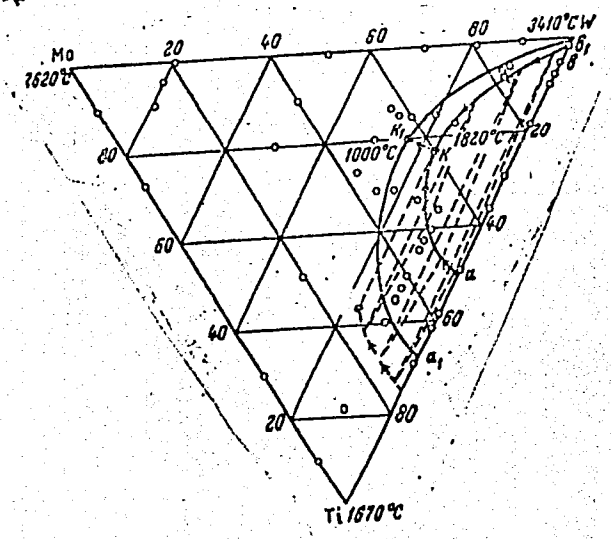
TOPIC TAGS: tungsten molybdenum titanium system, tungsten molybdenum titanium alloy, alloy phase diagram, alloy phase composition, alloy structure

ABSTRACT: A series of 49 alloys of the tungsten-molybdenum-titanium system were melted from 99.95%-pure tungsten, 99.95%-pure molybdenum, and 99.9%-pure titanium. A ternary diagram of the system was plotted on the basis of data obtained by physicochemical analysis. It was found that tungsten and titanium have a considerable solid-state solubility in molybdenum, which slightly decreases with decreasing temperature. For instance, the total solubility of tungsten and titanium in molybdenum at 1500C and a W:Ti ratio of 4:1 was over 80%, but at 1000C it dropped to 77—78%. The total solubility of a W:Ti ratio of 3:2 changed similarly when the temperature dropped from 1500 to 1000. Addition of molybdenum to binary W-Ti alloys increases the mutual solubility of components. At 1500 and 1000C, a continuous series of solid solutions is formed at respective molybdenum contents of about 20% and 25%.

UDC: 669.275.28.295

Card 1/2

ACC NR: AP6036444



Orig. art. has: 6 figures and 1 table.
SUB CODE: 11/ SUBM DATE: 01Mar66/ ORIG REF: 002/ OTH REF: 008/ ATD PRESS: 5108
Card 2/2

ACC NR: AP6036841 SOURCE CODE: UR/0020/66/171/002/

AUTHOR: Savitskiy, Ye. M. (Corresponding member AN SSSR); Baron, V. V.; Yefimov, Yu. V.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: New vanadium compounds with the Cr_3Si-type structure

SOURCE: AN SSSR. Doklady, v. 171, no. 2, 1966, 331-332

TOPIC TAGS: superconductor, superconducting property, vanadium, vanadium indium compound, vanadium cadmium compound, vanadium zinc compound, vanadium bismuth compound, compound superconductivity, vanadium tellurium compound, vanadium lead compound

ABSTRACT: In a search for new superconducting compounds, vanadium wires diffusion coated with An, Cd, In, Tl, Pb or Bi were investigated. It was found that all coatings had a multiphase structure. In addition to vanadium lines, x-ray diffraction patterns showed lines of phases with a cubic structure of the Cr_3Si-type and the following lattice parameters: 4.92—4.95 Å for V_3Cd; 4.87 Å for V_3Pb; 5.28—5.56 Å for V_3In; 5.21—5.25 Å for V_3Tl; and 4.72 Å for V_3Bi. Variations in the lattice parameters of V_3In, V_3Cd and V_3Ti indicate the existence of a homogeneity zone. Diffusion coatings containing V_3In had a temperature of transition to the super-

UDC: 539.23;537.312.62

Card 1/2

ACC NR: AP6036841

conducting state of 13.9°K. Other coatings tested did not show superconductivity at temperatures above 4.2°K. Orig. art. has: 1 figure.

SUB CODE: 11,20/SUBM DATE: 11Aug66/ ORIG REF: 002/ OTH REF: 004/
ATD PRESS: 5108

Card 2/2

ACC NR: AP6036722 SOURCE CODE: UR/0030/66/000/011/0043/0049

AUTHOR: Savitskiy, Ye. M. (Corresponding member AN SSSR)

ORG: none

TITLE: Metallic compounds--a reserve of new materials

SOURCE: AN SSSR. Vestnik, no. 11, 1966, 43-49

TOPIC TAGS: intermetallic compound, physical metallurgy, physicochemical property, melting point, plastic deformation, temperature dependence, phase diagram, crystal structure, superconductivity, magnetic property

ABSTRACT: Recent advances in the development of intermetallic compounds, their physical and chemical properties, and their applications in science and technology were reviewed. The properties of intermetallic compounds differ from those of the parent metals. In many intermetallic compounds the melting point is greater than any of its component metals, favoring the use of metallic compounds in high temperature environments. Most metallic compounds were discovered through phase diagrams. In the SSSR the successes in this direction have been due chiefly to N. S. Kurnakov and his school at the Institute of General and Inorganic Chemistry, and at the Institute of Metallurgy. The stability of intermetallics depends on their free energy, heat of formation, and melting temperature. Classification is done on the basis of their chemical interaction and

UDC: 661.6

Card 1/2

ACC NR: AP6036722

the similarity of their crystal structure. In contrast to metals, metal compounds have complex crystal structures. Being brittle at room temperature, metallic compounds can be deformed plastically at 70-90% of their melting temperature. A photograph showed a cylinder of gamma phase aluminum-magnesium hot compressed into a disc. Microstructures showed that hot working refined the grain size relative to the case condition. At 50-80% of the melting point, the silicides of copper, nickel, and cobalt attain maximum strength. The peculiarities of the intermetallic bond, and of the electronic and crystal structures at various temperatures is still under study. Metal-intermetallic materials have better plasticity at somewhat lowered strengths. A schematic drawing was shown of an apparatus used for producing such composites, and the properties and applications of these were described. Metal-nonmetal compounds are used as heating elements (molybdenum disilicide) and crucibles are made from carbides of titanium and molybdenum aluminide for the melting of titanium which is extremely reactive. Superconducting compounds made of niobium-tin are being used in research. Photographs are shown of a superconducting bushing and of a superconducting magnetic pump made from a metallic compound. Orig. art. has: 6 figures.

SUB CODE: 11/ SUBM DATE: none

Card 2/2

ACC NR: AP7001547 SOURCE CODE: UR/0020/66/171/003/0577/0579

AUTHOR: Savitskiy, Ye. M. (Corresponding member AN SSSR); Burkhanov, G. S.; Bokareva, N. N.; Khazov, N. P.

ORG: Institute of Metallurgy im. A. A. Baykov, Academy of Sciences SSSR (Institut metallurgii Akademii nauk SSSR)

TITLE: Investigation of the structure and properties of molybdenum-niobium alloy single crystals

SOURCE: AN SSSR. Doklady, v. 171, no. 3, 1966, 577-579

TOPIC TAGS: molybdenum niobium alloy, molybdenum niobium alloy property, molybdenum niobium alloy crystal, alloy single crystal, molybdenum alloy, niobium alloy

ABSTRACT: Single crystals of molybdenum-niobium alloys containing 0—100% niobium were grown from alloy bars obtained by vacuum melting components which contained 0.001—0.002% O_2, 0.0001—0.0005% H_2, and 0.01% C. All the crystals grown had [100] or [110] orientation. It was found that the electrophysical and mechanical properties of alloy single crystals strongly depended on the orientation. The highest ductility was found in crystals with [110] orientation. Differences in strength, reduction of area, and elongation between the crystals with [100] and [110] orientations were up to 50%. No anisotropy of hardness was observed. The content of interstitial impurities significantly affected the elongation and reduction of area. Increasing

Card 1/2 UDC: 669.017:53

ACC NR: AP7001547

the second component in molybdenum-niobium alloys increased the strength of single crystals and decreased the ductility following the same pattern as that of polycrystalline alloys. Single crystals of molybdenum, niobium and their alloys with up to 20% of the second component have a high ductility with a reduction of area of over 50%. Alloys containing over 40% of the second component have a lower ductility and fail along the cleavage plane [100]. Orig. art. has: 4 figures and 1 table.

SUB CODE: 11, 20/ SUBM DATE: 13Aug66/ ORIG REF: 004/ ATD PRESS: 5111

Card 2/2

ACC NR: AP7003649 SOURCE CODE: UR/0020/67/172/001/0087/0089

AUTHOR: Savitskiy, Ye. M. (Corresponding member AN SSSR); Burkhanov, G. S.; Bokareva, N. N.; Grokhochinskiy, A. S.; Ottenberg, Ye. V.

ORG: Institute of Metallurgy im. A. A. Baykov, Academy of Sciences, SSSR (Institut metallurgii Akademii nauk SSSR)

TITLE: Effect of original crystallographic orientation on the recrystallization temperature wire obtained from molybdenum single crystals

SOURCE: AN SSSR. Doklady, v. 172, no. 1, 1967, 87-89 and insert facing p. 77

TOPIC TAGS: molybdenum single crystal, ~~molybdenum~~ recrystallization temperature, ~~molybdenum~~ crystal orientation, single crystal growing

ABSTRACT: Pure molybdenum single crystals were grown along three different axes and wires were drawn from these crystals and annealed at various temperatures to determine the temperature of recrystallization. Wires obtained from single crystals with an original orientation of 24° from [100] had the lowest temperature of recrystallization (650C) and wires obtained from crystals with an orientation of [110] had the highest temperature of recrystallization (950C). Microalloying with zirconium and titanium significantly increases the temperature of the beginning of recrystallization. Wires obtained from microalloyed molybdenum single crystals with an orientation of [110] had the highest temperature of recrystallization

Card 1/2 UDC: 669.017

ACC NR: AP7003649

(1700C) and those obtained from crystals with an orientation of 24° from [100] had the lowest (1300C). Thus, by growing single crystals of molybdenum, microalloyed with zirconium and titanium, along the [110] and [100] orientations, the recrystallization temperatures of wires obtained from the crystals can be increased to 1600—1700C. Orig. art. has: [TD]

2 figures and 3 tables.

SUB CODE: 20/11/ SUBM DATE: 13Jun66/ ORIG REF: 002/ OTH REF: 001/
ATD PRESS: 5115

Card 2/2

SAVITSKIY, YU. A.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 25-26, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Savitskiy, Yu. A.	"Fundamentals of the Construction of Radio Masts"	Ministry of Communications

SO: Monthly List, 1 July 1954

SAVITSKIY, Yu.G., starshiy prepodavatel'

Determining the coefficient of the dynamics of wind pressure on trees. Les., bum. i der. prom. no.1: 59-64 '65. (MIRA 18:12)

SAVITSKIY, Yu. I.

COMMUNICATION

"Analysis of Five-Digit Codes for Letter-Printing Telegraph Apparatus," by Yu. I. Savitskiy and V. M. Timoveyev, Elektrosvyaz', No 7, July 1957, pp 57-62

Various telegraph codes for letter-printing sets are analyzed from the point of view of protection against "register" errors. A method is proposed for devising a telegraph code with a minimum probability of false service combination.

Card 1/1 - 20 -

6.4500

S/044/60/000/009/021/021
C111/C222

AUTHORS: Pugach, A.B., Savitskiy, Yu.I., and Tumanovskiy, Ye.I.

TITLE: On the Question on Reading Instruments of Electronic Transmitters

PERIODICAL: Referativnyy zhurnal.Matematika, 1960, No.9, p.212, Abstract No.11059. Tr.Sektsii provodn.svyazi.Ukr.resp.pravl. Nauchno-tekhn. o-va radiotekhn. i elektrosvyazi, 1958, vyp.3, pp.63-66

TEXT: The author give a short survey of photoelectronic reading instruments of transmitters working with a tape with a five-digit code. They consider some peculiarities of the scheme of the reading instruments: 1) Scheme with one constant surce of light if the photocells are commutated; 2)Scheme with several sources of light which are switched on alternately by the distributor; 3) Scheme in which the elements of the distributor themselves are the sources of light.

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

Card 1/1

AID P - 456

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 19/34

Author : Savitskiy, Yu. K., Eng., Rostov

Title : L. I. Dvoskin's "New Layout and Structure of the Switching Equipment of Electric Power Stations" (Elektrichestvo, Nos. 11, 1953; 6, 1954) (Discussion)

Periodical : Elektrichestvo, 7, 83-84, Jl 1954

Abstract : The scheme proposed by L. I. Dvoskin is criticized. The necessity of widespread introduction of split reactors connected into the transformer and generator networks in the layouts of 6 to 25,000-kw electric power stations and substations is recognized. 3 diagrams.

Institution : Rostov Branch of TEPLOELEKTROPROYEKT: Trust for the Planning and Investigation of Thermal and Electric Power Plants, Networks and Substations.

Submitted : No date

SAVITSKIY, YU. K.

AID P - 3323

Subject : USSR/Power Engineering

Card 1/2 Pub. 26 - 9/28

Author : Savitskiy, Yu. K., Eng.

Title : Use of a dividing-bus reactor in the electric distribution layout of a thermal power plant

Periodical : Elek. sta., 8, 31-33, Ag 1955

Abstract : The additional equipment necessary when a thermal power plant is expanded, especially the bus and switch gear equipment and its installation, is discussed. Different layouts are suggested and illustrated with diagrams and tables. The use of reactors is strongly recommended for their relatively low cost, uncomplicated design, and safe operation. A mass production of standard reactors is also recommended. Five diagrams.

AID P - 3323

Elek. sta., 8, 31-33, Ag 1955

Card 2/2 Pub. 26 - 9/28

Institution : None

Submitted : No date

SAVITSKIY, Yu.N.

A case of ganglioneuroma. Vest.khir. 77 no.3:119 Mr '56.
(MLRA 9:7)

1. Iz Minskogo okruzhnogo voyennogo gospitalya No. 432 (nachal'nik M.V.Khiteyev)
(NERVOUS SYSTEM, SYMPATHETIC--TUMORS)

SAVITSKIY, Yu.N. (Minsk)

Six cases of diaphragmatic hernia. Vest.khir. 77 no.4:94-97 Ap '56.

1. Minsk, okruzhnoy voyennyy gospital'
(HERNIA, DIAPHRAGMATIC, case reports)

SAVITSKIY, Yu. K., Cand Med Sci—(diss' "Contrast roentgenography of the knee joint as a method of diagnosis of meniscus injuries." Minsk, 1957. 19 pp (Minsk State Med Inst), (KL,26-58, 117)

EXCERPTA MEDICA Sec 9 Vol 13/4 Surgery Apr 59

1785. (584) CONTRAST RADIOGRAPHY OF THE KNEE JOINT AS A METHOD FOR DIAGNOSIS OF CARTILAGE INJURIES (Russian text) - Savitskiĭ Yu. N. - ZDRAVOOKHR. BELOR. 1957, 4 (47-50)

A 40% solution of methiodal ('sergosine') was used in contrast tomography of the knee joint. It is necessary to anaesthetize the joint before the injection of the contrast medium. Contrast radiography is indicated in all cases in which damage of the cartilages is suspected. The conclusions derived from this method of examination were found to be correct in 97.3% of cases. Contrast arthrotomography allows the location of cartilaginous tears. (S)

SAVITSKIY, Yu.N.

Leiomyosarcoma of the stomach. Khirurgiia Supolement:20 '57.
(STOMACH--CANCER) (MIRA 11:4)

SAVITSKIY, Yu.N., TREYSTER, G.N.

Precardial diverticulum of the stomach. Vest.rent. i rad. 33 no.5:93 S-O '58 (MIRA 11:11)
(STOMACH, diverticula
precardial, x-ray diag. (Rus))

SAVITSKIY, Yu.N. (Minsk, ul. Varvashini, d.30, kv.5); TREYSTER, G.N.

Contrast tomography of the knee joint in meniscus injury. Vest.rent. i rad. 34 no.4:40-44 Jl-Ag '59. (MIRA 12:12)
(KNEE wds & inj.)

KARCHIK, V.G., inzh.; SAVITSKIY, Yu.P.

Establishing an efficient flow sheet for the transportation of window glass. Stek. i ker. 23 no.1:16-17 Ja '66.
(MIRA 19:1)

1. Vsesoyuznyy gosudarstvennyy mezhotraslevoy proyektno-konstruktorskiy institut po avtomatizatsii predpriyatiy promyshlennosti stroitel'nykh materialov.

IVANOV, V.M.; SAVITSYN, G.M.[Savitsyn, H.M.]

Some problems of Tertiary and Jurassic water-bearing sediments in the Rudky gas field. Geol. zhur. 23 no.2:71-78 '63. (MIRA 16:6)

1. Ukrainskiy nauchno-issledovatel'skiy gornorudnyy institut.
(Carpathian Mountain region—Water, Underground—Analysis)
(Carpathian Mountain region—Gas, Natural—Geology)

SHCHUKIN, V.A.; SAVITSKIY, G.M.

Hydrogeological conditions in the Kokhanovka-Svidnitsa oil-bearing region. Neft. i gaz. prom. no.4:9-13 O-D '63. (MIRA 17:12)

1. Trest "L'vovnaftegazrazvedka" (for Shchukin). 2. IGGI AN UkrSSR (for Savitskiy).

15-57-12-17213

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12, p 69 (USSR)

AUTHORS: Tkachuk, L. G., Ivanova, G. N., Savitsyna, A. A.

TITLE: The Charnockite-Norite Rocks of the Moldavskaya SSR (Charnokito-noritovyye porody Moldavskoy SSR)

PERIODICAL: Nauchn. zap. L'vovsk. politekhn. in-t., 1956, Nr 46, pp 106-111

ABSTRACT: Ancient Precambrian rocks occur along the right bank of the Dnestr River below the village of Kosoutsa. They are predominantly red granites (or pink) of the Dnepr type and are an extension of the Precambrian crystalline rocks of the Ukrainian crystalline shield. The rocks of the charnockite-norite series are exposed on the right bank of the Dnestr River and are strongly weathered on the surface. On fresh exposures they are dark gray and fine grained. They consist of

Card 1/4

The Charnockite-Norite Rocks (Cont.)

plagioclase, ranging from andesine (An_{44-48}) and labradorite ($An_{52-56-60-67}$) to pure anorthite (An_{90-100}), clinohypersthene (extinction angle to Ng 3° to 10°, Ng–Np = 0.012), diopside (extinction angle to Ng 43°, Ng–Np = 0.027), and hornblende (extinction angle to Ng 12° to 18°, Ng–Np = 0.016). Chemical analyses of these rocks are given in the table (in percent). Petrochemically the rocks are very similar to the rocks of the Podolian charnockite-norite complex, on the one hand, and to the pyroxene-plagioclase gneisses, on the other. Consequently the rocks of the charnockite-norite complex are seen to be the products of various petrogenetic processes, which, although they produced granite intrusions, cannot be considered strictly magmatic. Therefore the charnockite-norite complex should not be considered of magmatic origin.

15-57-12-17213

The Charnockite-Norite Rocks (Cont.)

Components	1	2	3	4
SiO_2	47.46	52.78	55.24	62.00
TiO_2	2.50	2.40	1.83	1.93
Al_2O_3	15.28	13.94	14.04	12.46
Fe_2O_3	7.78	5.80	3.20	2.67
FeO	8.28	9.70	10.05	6.94
MnO	0.13	0.22	0.21	0.16
MgO	5.65	4.75	4.71	2.84
CaO	9.76	7.92	7.83	8.32
Na_2O	0.45	tr	0.45	tr
K_2O	0.46	None	None	None

Card 3/4

The Charnockite-Norite Rocks (Cont.)

P_2O_5	0.46	0.66	0.85	1.16
H_2O 105°	0.08	None	0.06	None
Others	0.11	None	0.12	0.12
SO_3	1.23	0.89	0.48	0.49
Spyr	0.62	0.50	0.60	0.70
Total	100.25	99.56	99.67	99.79

Card 4/4

O. V. Bryzgalin

SAVITSYNA, A.A. [Savitsyna, H.O.]; PLAKHOTNYY, L.G. [Plakhotnyi, L.H.]

New data on the nature of the Novotsaritsyn gravity anomaly. Dop. AN URSR no.6:758-761 '65. (MIRA 18:7)

1. Ukrainskiy nauchno-issledovatel'skiy geologorazvedochnyy institut.

SAVIUC, Victor; CORLATEANU, Vasile, prof. MURGU, Zaira

Transitory processes during the connecting and disconnecting of single-phase transformers functioning under a capacitive load. Studii fiz tehn Iasi 11 no.1:39-50 '60. (EEAI 10:3)

1. Comitetul de redactie, Studii si cercetari stiintifice, Fizica si stiinte tehnice, Membru (for Corlateanu)
(Electric transformers) (Electric switchgear)

SAVIUC, Victor; MURGU, Zaira

The functioning of a saturated coil in alternating current. Studii fiz tehn Iasi 11 no.1:111-117 '60. (EEAI 10:3)
(Electric coils) (Electric currents)

SAVIUC, Victor; SABATIN, Igor; CRISAN, Alexandru

Electric parameters of steel multiple-wire conductors. Studii fiz tehn Iasi 11 no.1:135-147 '60. (EEAI 10:3)
(Electric conductors) (Electric wire)
(Steel)

SAVIUC, V.; CORLATEANU, Vasile, prof.; MURGU, Zaira

Transitional conditions in the switching on of three-phase transformers. Studii fiz tehn Iasi 11 no.2:215-228 '60.

1. Comitetul de redactie, "Studii si cercetari stiintifice, fizica si stiinte tehnice (Academia RPR, Filiala Iasi] (for Corlateanu).

(Electrick transformers)
(Electric currents, Alternating)

CORLATEANU, V.; FILIPIUC, I.; SERBAN, Gh.; SAVIUC, V.

Performance of a nonsymmetrical, general-series, double-fed synchronous machine. Studii fiz tehn Iasi 12 no.1:45-66 '61.

SABATIN, I.; SAVIUC, V.

Theoretical bases for methods of determining the explosive security of electric installations in an explosive atmosphere. Archiw gorn 9 no.2:201-214 '64.

SAVIUC, V. D.

Pressing back the current in the conductors of the slots in the electric machines with alternating current. Studii fiz tehn Iasi 12 no.1:141-145 '61.

SAVIUC, V. D.

Mechanical characteristics of an asynchronous motor in nonsymmetrical conditions, studies with the aid of a cathodic oscillograph. Studii fiz tehn Iasi 12 no.1:147-157 '61.

SAVIUC, V.; SABATIN, L; CRISAN, A.

Electric parameters for alternating-current domestic steelwire conductors. p.148. (ELECTROTHEHICA, Vol. 5, No. 5, May 1957, Rumania)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 12, Dec. 1957 Uncl.

SAVIUC, V.D.; CETATEANU, C.D.

Variation of the resistance and internal reactance of steel conductors with the tensile force at the 50 Hz frequency. Studii fiz tehn Iasi 10 no.1:93-103 '59 (EEAI 9:3)

1. Filiala Iasi a Academiei Republicii Populare Romine.
(Electric conductors) (Steel)
(Electric waves)

SAVIUC, V.

Some clarifications related to the G. Kron calculus of matrices in the study of electric networks. Studii fiz tehn Iasi 10 no.1: 119-121 '59 (EEAI 9:3)

(Electric networks) (Matrices)
(Calculus of tensors)

SAVIUC, Victor; CORLATEANU, Vasile, prof.; MURGU, Zaira

Transitory processes in coupling the single-phase transformers. Studii fiz tehn Iasi 10 no.2:159-176 '59. (EEAI 9:9)

1. Comitetul de redactie, Studii si cercetari stiintifice, Fizica si stiinte tehnice, Filiala Iasi, Academia Republicii Populare Romine (for Corlateanu)
(Electric transformers)

SAVIUC, Victor; SABATIN, Igor; CRISAN, Alexandru

Electric parameters of the aluminum-steel twisted cables. Studii fiz tehn Iasi 10 no.2:177-194 '59. (EEAI 9:9)
(Electric cables) (Impedance (Electricity))
(Aluminum) (Steel) (Torsion)

SAVIUC, V. D.; MURGU, Zaira

Contributions to the study of the mechanical characteristics of electric machines with the aid of the cathodic oscillograph. Studii fiz tehn Iasi 11 no.2:229-237 '60.

(Electric machines) (Cathode-ray oscillograph)

SAVIUC, V. D.

Some considerations on the computation of the surface reactance of bars. Studii fiz tehn Iasi 11 no.2:293-296 '60.

(Reactance(Electricity)) (Copper)

SAVIUC, V.D.

Skin effect in bimetallic conductors. Studii fiz tehn Iasi 12 no.2:353-365 '61.

SAVIUC, Victor D.

Influence of saturation on the characteristics of alternating current machines. Note 1. Studii fiz tehn Iasi 13 no.1 91-106 '62.

SAVIUC, Victor D.

Problems of modern lighting. Studii fiz tehn Iasi 13 no.1:117-119 '62.

SAVIUC, V.D.; SABATIN, I.

Eddy currents in the top dressing nonferromagnetic thin tube introduced in the air gap of an asynchronous engine with the rotor in short circuit. Studii fiz tehn Iasi 14 no.1:75-89 '63.

SAVIUC, V.D.

Asynchronous engine with top dressing tube in air gap. Studii fiz tehn Iasi 13 no.2:195-231 '62.

L 46941-65

ACCESSION NR: AP5015090 RU/0004/64/000/010/0368/0382

AUTHOR: Saviuc, Victor D. (Chief researcher)(Iasi)

TITLE: Asynchronous machine with a solid ferromagnetic rotor

SOURCE: Electrotehnica, no. 10, 1964, 368-382

TOPIC TAGS: electric motor, electric rotating equipment part

ABSTRACT: (Author's English summary modified): A simplified theoretical discussion of asynchronous motors with solid ferromagnetic rotors. Various design modifications are described, and the influence of the different factors on the characteristics of the motors is analyzed. The operation of motors with solid rotors is described and compared with that of conventional ones, and possible fields of application are discussed. Orig. art. has 12 figures, 21 formulas, 17 graphs and 2 tables.

ASSOCIATION: Centrul de Cercetari Tehnice al Filialei Iasi a Academei RPR (Technical Research Center of the Iasi Branch of the RPR Academy)

SUBMITTED: 15Dec63 ENCL: 00 SUB CODE: EE

NO REF SOV: 039 OTHER: 011 JPRS

Card 1/1

L 1202-66

ACCESSION NR: AP5025838 RU/0004/65/000/003/0083/0088

AUTHOR: Saviuc, Victor (Engineer, Chief researcher)(Iasi); Chiritescu, Dan (Engineer, Head of workshop installation) (Iasi); Dordea, Dionisie (Engineer, Chief Planner) (Iasi)

TITLE: Mobile transformer stations 23

SOURCE: Electrotehnica, no. 3, 1965, 83-88

TOPIC TAGS: electric transformer, electric power engineering

ABSTRACT: A survey on the design and construction of mobile transformer stations, both in Rumania and in other countries. Technical data and design details are presented, especially on 240 kilovolt-ampere--6/0.4 kilovolt transformer centers. Orig. art. has: 9 figures.

ASSOCIATION: [Saviuc] Centrul de cercetari tehnice al Academiei RPR (Technical Research Center of the RPR Academy); [Chiritescu] DSAPC; [Dordea] IRE

SUBMITTED: 25Dec63 ENCL: 00 SUB CODE: EE

NR REF SOV: 001 OTHER: 005 JPRS

Card 1/1

SAVIUC, V.; MURGU, Z.

Experimental results obtained for connecting curr- ts of triphase transformers. Studii fiz tehn Iasi 14 no.2:401-411 '63.

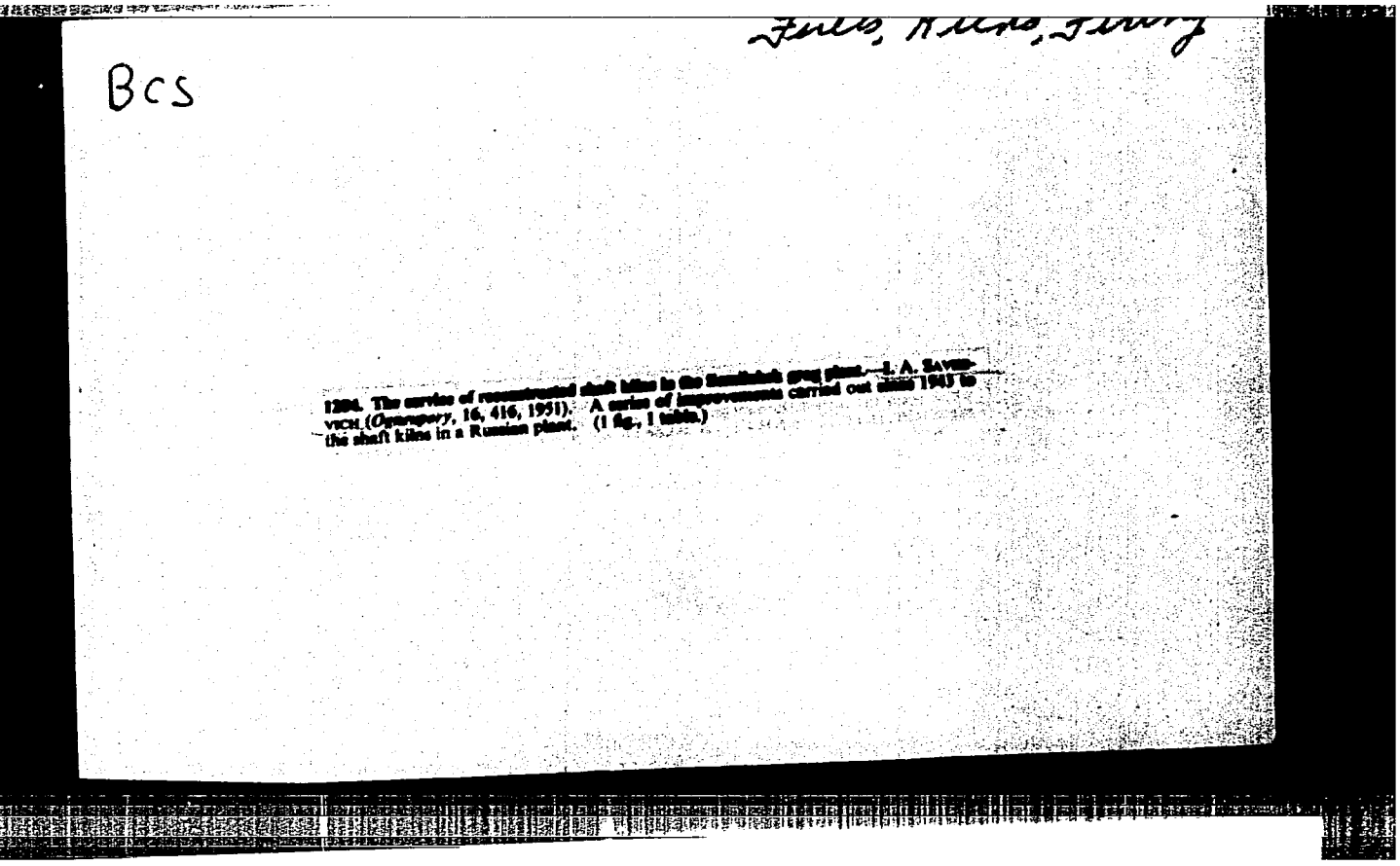
CORLATEANU, V., prof.; SAVIUC, Victor; MURGU, Zaira

Experimental results obtained in connecting the single-phase transformer. Studii fiz tehn Iasi 12 no.2:215-234 '61.

1. Membru al Comitetului de redactie, "Studii si cercetari stiintifice, Fizica si stiinte tehnice" -Filiala Iasi - (for Corlateanu).

KOZAK, Filipp Grigor'yevich; USHAKOV, Dmitriy Mikhaylovich; SAVKEVICH, D.V., dotsent, kand.tekhn.nauk, retsenzent; BESSONOV, B.V., inzh., red.; SOROKA, M.S., red.izd-va

[Automatic machinery for cutting ceramic materials] Avtomaty dlia rezki keramicheskikh materialov. Kiev, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1958. 141 p. (MIRA 12:4)
(Cutting machines) (Ceramics)



Fuels, Misc. Ferrous

Bcs

1284. The service of reconstructed shaft kilns in the Semiluksk group plant.—I. A. SAVIN-VICH. (*Ogneupory*, 16, 416, 1951). A series of improvements carried out since 1943 in the shaft kilns in a Russian plant. (1 fig., 1 table.)

SAVKEVICH, I.A., inzh; MIL'SHENKO, R.S., inzh.; ZHELVAKOV, A.A., inzh.

High frequency moisture meter. Ogneupory 18 no.9:396-400 '53.
(MIRA 11:10)

1.Semilukskiy shamotnyy zavod.
(Refractory materials--Testing)

SAVKEVICH, I.A.

15 27 18

Refractories high in Al_2O_3 from slags from the production of chromium metal. V. A. Bron, I. A. Savkevich, and R. S. Mil'shenko. *Ogneupory* 22, 49–56(1957).—The highly aluminous slag produced in the thermite process in which Cr ores are reduced to the metal are the raw material for a new type of refractory. They contain corundum (α-Al_2O_3) 30–5, $Na_2O.11Al_2O_3$ ("β-corundum") 60–70, and glass and metal droplets 2–5%. The alkali content is relatively high (2–4%). The optical properties of the β-corundum are $\omega = 1.682$ and $\epsilon = 1.668$, but these may be increased to $\omega = 1.710–1.718$ and $\epsilon = 1.690 – 1.695$ by addn. of Cr_2O_3. The α-Al_2O_3 is usually rose-colored with a distinct pleochroism, $\omega = 1.80 – 1.97$ and $\epsilon = 1.78 – 1.950$. An attempt was made to bind the crushed and assorted slag material with a refractory kaolin and lignosulfite brine. These binders, however, decrease the very high refractoriness of the pure slag material. A brick was produced contg. $Al_2O_3 > 75\%$, Cr_2O_3 10–12%, and a kaolin binder 5–10%. The refractoriness of the new material is 1850–1900°, deformation under load begins at 1500–1600°, it has a remarkably high heat conductance and d. (3.86), the coeff. of thermal expansion is 7.0×10^{-6}, and the thermal shock resistivity is excellent (more than 100 cycles). W. Ritel

AUTHORS: Zhikharevich, S.A., Getman, I.A., Kozyreva, L.A., 131-58-4-10/17
Savkevich, I.A., Mil'shenko, R.S., Konetskiy, N.V

TITLE: The Production Technology of Highly Aluminous Dense Products When Using the Dispersed Concentrate of the Aktash Occurrence (Tekhnologiya proizvodstva vysokoglinozemistykh plotnykh izdeliy s primeneniyem aktashskogo diasporovogo kontsentrata)

PERIODICAL: Ogneupory, 1958, Nr 4, pp. 175-179 (USSR)

ABSTRACT: Experiments showed that this dispersed concentrate is not easily caked together at high temperatures even if previously finely crushed. Further, the result of petrographic investigations carried out by N.V. Gul'ko is given. An illustration shows the properties of samples from 100% dispersed concentrate of the Aktashsk occurrence at a pressure of 200 kg/cm^2 and a burning temperature of up to 1700°. If the dispersed concentrate is burned twice its quality is improved but the working process is rendered more complicated. Experiments were therefore carried out in which previously burned and finely ground dispersed concentrate is used as a dust-like component of the fire-clay mass (dispersed fire clay).

Card 1/3

The Production Technology of Highly Aluminous Dense Products When Using the Dispersed Concentrate of the Aktash Occurrence

131-58-4-10/17

The properties of dispersed fire clay and of such made of technical alumina and clay are given in table 1. The characteristic of the masses and the properties of the crude samples may be seen from table 2, and those of samples burnt at 1520° from table 3. Furthermore, an industrial quantity of blast furnace bricks of the type D-2 was made. The granulation of the fire clay is shown in table 4 and the characteristic of the mass and the raw products are shown in table 5. Conclusions: 1.) By a joint application of the dispersed concentrate and technical alumina it is possible to obtain highly aluminous dense products. 2.) The dispersed aluminous products with a porosity of less than 12% have a good structure, they are of low permeability for smelts and gases, and have a volume stability at 1500-1550°C. It is recommended to intensify the search for dispersed ores on the condition that costs are considerably reduced. There are 1 figure, 5 tables, and 5 references, 4 of which are Soviet.

Card 2/3

The Production Technology of Highly Aluminous Dense Products When Using the Dispersed Concentrate of the Aktash Occurrence

131-58-4-10/17

ASSOCIATION: Khar'kovskiy institut ogneuporov (Khar'kov Institute for Refractories)
Voronezhskiy Sovnarkhoz (Voronezh Economic Council)
Semilukskiy ogneupornyy zavod (Semiluki Plant for Refractories)

Card 3/3